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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/884,998	06/21/2001	Takemori Takayama	980923A	5046
23850 7590 04/04/2007 ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP 1725 K STREET, NW SUITE 1000 WASHINGTON, DC 20006			EXAMINER IP, SIKYIN	
			ART UNIT 1742	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/04/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

09/884,998

Applicant(s)

TAKAYAMA ET AL.

Examiner

Sikyin Ip

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 25-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 25-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/8/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 25-33 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claims 25 and 30, the new matter expression

“ intermediate layers formed between said soft layer and each said quench hardened layer. ” is not supported by the specification as originally filed. Applicants are required to point out support from the specification as originally filed or delete the new matter.

Terminal Disclaimer

The terminal disclaimer filed on December 27, 2006 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Claim Rejections - 35 USC § 103

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 25-26 and 28-29 are rejected under 35 U.S.C. § 103 as being unpatentable over USP 6193820 to Girardello et al.

Girardello discloses the features including the claimed crawler belt bushing, three different hardened layers, hardness, microstructures, and its hardened outside layer to inner layer thickness ratio (Figures 7-8 and col. 5, lines 55-63; Figure 3, and col. 3, lines 59-67). In Figure 3, the two regions (softer layer) having mixed structure (ferrite, bainite, pearlite) are attached to the outer and inner circumferential surfaces. The difference between the reference(s) and the claims are as follows: Girardello does not explicitly disclose the inner layer is harder than the outer layer. But, the hardness according to Figures 1 and 7 are very close that either one could be higher or lower than the other. Furthermore, hardness on either layer exists in range and the range of the outer layer overlaps the inner layer. Therefore, optimization of a variable recognized in the art as a result-effective variable normally is considered to be within the ordinary skill of the art. See *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977).

With respect to the process limitations in the claims that the invention defined in a product-by-process claim is a product, not a process. In re Bridgeford, 357 F. 2d 679, 149 USPQ 55 (CCPA 1966). It is the patentability of the product claimed and not of the recited process steps which must be established. See In re Brown, 459 F. 2d 531, 173 USPQ 685 (CCPA 1972) and In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976). The guidance that has been provided by court on this matter is

[i]f the product in a product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.

In re Thorpe, 777 F.2d 695, 227 USPQ 964, 966 (Fed. Cir. 1985).

With respect to the expression "being attached thereto" is interpreted as a soft layer positioned closer to the inner circumferential surface according to page 15, lines 7 to 17 of instant specification. Thus the claimed soft layer reads on ferrite + bainite mix in Figure 8 of said reference.

Claims 27 and 30-33 are rejected under 35 U.S.C. §103(a) as being unpatentable over reference as applied to claims above, and further in view of JP 401272719.

The claimed subject matter as is disclosed and rejected above by the cited reference(s) except for the bushing steel composition. However, JP 401272719 in page 3, Table 1 discloses the claimed bushing steel is merely a conventional steel for bushing in the same field of endeavor or the analogous metallurgical art. Accordingly, it would have been prima facie obvious for an ordinary skill artisan motivated by a reasonable expectation of success to heat treat bushing as taught by Girardello with

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conventional bushing steel in order to obtain all of the known benefits. In re LaVerne, et al., 108 USPQ 335.

Response to Arguments

Applicant's arguments filed December 27, 2006 have been fully considered but they are not persuasive.

A distinction between the claimed invention and the cited references is highlighted in the showing of a distinction between the claimed "soft layer" of the present core region and the corresponding core region of Girardello.

In Girardello's bushing, which is shown in its finished condition in Fig. 8, a core region of

Applicants argue that "the bushing is made up of sorbite". ~~As can be seen by referring to Fig. 6, which is described at~~ But, instant claimed "softer layers" do not exclude martensite. See original claims 25 and 30

(US Pub. No. 2001/0050121)

cooling, the structure between said quench hardened layers being composed of one or more structures selected from ferrite, pearlite, bainite and martensite which are precipitated during cooling from the quenching temperature, said bushing being low temperature tempered.

Moreover, Girardello in col. 3, lines 65-67 discloses

Two regions having a mixed structure (ferrite, bainite, pearlite) form between the outer regions and the core of the bushing: the presence of a sorbitic structure in the core. The regions between the outer regions and the core of Girardello read on claimed "soft layers".

Applicants argue that "In the present invention, martensite is never formed in the core region."

Again, applicants' attention is directed to original claims 25 and 30 pasted below:

cooling, the structure between said quench hardened layers being composed of one or more structures selected from ferrite, pearlite, bainite and martensite which are precipitated during cooling from the quenching temperature, said bushing being low temperature tempered.

Applicants' argument in page 11 of instant remarks is noted. But, there is no "intermediate layers" defined or disclosed in the specification as originally filed.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

All recited limitations in the instant claims have been met by the rejections as set forth above.

Applicant is reminded that when amendment and/or revision is required, applicant should therefore specifically point out the support for any amendments made to the disclosure. See 37 C.F.R. § 1.121.

Examiner Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Ip whose telephone number is (571) 272-1241. The examiner can normally be reached on Monday to Friday from 5:30 A.M. to 2:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Roy V. King, can be reached on (571)-272-1244.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

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published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



SIKYIN IP
PRIMARY EXAMINER
ART UNIT 1742

S. Ip
March 29, 2007